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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Vilho Nissinen

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STIENNON & STIENNON  
612 W. MAIN ST., SUITE 201  
P.O. BOX 1667  
MADISON, WI 53701-1667

EXAMINER

ZHAO, XIAO SI

ART UNIT

PAPER NUMBER

1792

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,607	<b>Applicant(s)</b> NISSINEN ET AL.	
	<b>Examiner</b> XIAO ZHAO	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-16 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/3/2008</u>   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernert et al. (US 6063450).**

Per independent claim 11, Bernert et al. teach a method for directly or indirectly applying a liquid medium onto a paper web (col. 1, 10-18). The nozzle array (col. 2, 13) helps to apply a high dynamic pressure liquid medium on to an application roll (col. 3, 36-43).

Bernert does not teach the acting variable, selection of nozzles according to the variation in the said variable, and the way of measuring the variables.

It is well known in the art that nozzle manufacturers and users employ routine optimization to manufacture or select nozzles with the least amount of deviation in its

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performance. Please see the list of references listed under conclusion that shows a few of the well known arts that use such optimization. The size of the orifice and pressure are directly related to the flow of the liquid volume coating. Thus, a varying "acting variable" that is defined by varying nozzle open area characterized by the diameter of a throat of a nozzle will be proportional to the flow coming out of the nozzle orifice. When a selection of nozzles are found to have a significant impact on the uniformity of the coating due to its variation in flow quantity, similar routine optimization can be carried out to maximize the uniformity while minimizing the impact of manufacture error by selecting nozzles with the least variation in its orifice. One of ordinary skill in the art at the time of the invention would know that it would have been obvious to select nozzles with the least deviation in orifice size so an uniform coating can be achieved on a paper web because it is well known in the art to do so (see references in conclusion). It is inherent that when different nozzles inject different flow rates, an non-uniformity in the final coating or layer will appear, it is well established that the determination of an optimum value of a cause effective variable only requires routine experimentation or optimization.

Per claims 12-16, one of ordinary skill in the art at the time of the invention would know that it would have been obvious to select nozzles optically with the least deviation in orifice size so an uniform coating can be achieved on a paper web because it is well known in the art to do so (see references in conclusion). It is inherent that when different nozzles inject different flow rates, an non-uniformity in the final coating or layer

will appear and it is well established that the determination of an optimum value of a cause effective variable only requires routine experimentation or optimization.

### ***Response to Arguments***

4. The International Search Report and the IPER in the IDS filed on 7/14/2004 have been considered.

5. Applicant's arguments filed 9/8/2008 have been fully considered but they are not persuasive.

a. The Declaration under 37 CFR 1.132 filed on 9/8/2008 is insufficient to overcome the rejection of claim 11 based upon the reasoning as set forth in the last Office action because there are cited references in the conclusion portion as evidence to examiner's position that nozzle orifices are manipulated during manufacturing or usage to achieve a smaller deviation between the orifices and therefore "classifying the nozzles, as indicated in paragraph 4 of the declaration is apparently a known technique, as evidenced by said references cited in the Conclusion of this office action.

b. Applicants argue that it is hindsight to state that when a selection of nozzles are found to have a significant impact on the uniformity of the coating due to its variation in flow quantity. However, as stated in the rejection in section 3, it is inherent that when different nozzles exhibit different flow rates, the final layer or coating will have non-uniformity. Thus, this is the reason why any skilled artisan will try to minimize the variation between the flow rate so a better

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uniformity can be achieved. The cited references in the conclusion portion again demonstrates why it is well known and common in the art to do so.

c. Applicants argue that it is not routine optimization to be "select each...coating nozzles so that the acting variable varies from a mean...by less than 5%". It has already been established that different flow rates in the nozzles will result in non-uniformity in the final layer (see above), thus the nozzle orifices (which partially determines the flow rate) have an impact on the uniformity in the layer. Thus, the nozzle orifice and its flow rate are both result effective variables. It is well established that finding the optimum value of result effective variables only require routine experimentation or optimization.

d. Applicants argue that "One of ordinary skill in the art at the time of the invention would know that it would have been obvious to select nozzles with the least deviation in orifice size ..." is a bare statement without any articulated reasoning or a rational underpinning. It was established that it is well known in the art to do so, thus it would have been obvious to one of ordinary skill in the art to do so as well.

### ***Conclusion***

It is noted that there are numerous documents available in the state of art that are relevant teaching about routine optimization as evidence to examiner's position: Clear examples of such optimizations are shown by Brooks et al. (US 4282533, col. 2, 28-52) in which optical inspection is introduced to detect common defects encountered in nozzles such as varying orifice size and Miura et al. (US 4728392, col. 8, 23-37) in

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which a method is introduced to manufacture precisely dimensioned nozzle openings.

An example of such optimization is shown by Lombardo et al. (US 4318483, col. 2, 31-35) in which a microscope (optically) was used to view drop formations so it can be adjusted for a given nozzle diameter and flow rate.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO ZHAO whose telephone number is (571)270-5343. The examiner can normally be reached on Monday to Friday 8:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xiao S Zhao/  
Examiner, Art Unit 1792

/Michael Kornakov/  
Supervisory Patent Examiner, Art Unit 1792